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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/829,506 04/09/01 TZU

J 004728.P055

EXAMINER

MMC2/1010

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ALCALA, J
ART UNIT

PAPER NUMBER

2841
DATE MAILED:

10/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/829,506	Applicant(s) TZU ET AL.	
	Examiner Jose H Alcalá	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Reference Number 22 of Figure 1. Correction is required.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "tapes connected between said die and an end of said plurality of first leads over said dummy chip" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Specification

3. The disclosure is objected to because of the following informalities: In line 5 of page 6, the word "adhesive" is misspelled. In addition Page 4, lines 8-11 are objected because they are incorrectly stating that Figure 2 and Figure 3 are depicting the first embodiment of the invention, where it is clear from the drawings and page 6 lines 2-3 that Figure 3 is a separate embodiment that the embodiment of Figure 2. Furthermore in Page 4 lines 17-18, the lines are vague in saying that Figures 2 and 3 are depicting the top view of the invention, it is suggested that it be changed to read that each figure is a top view of a different embodiment of the invention.

Appropriate correction is required.

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4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of 37 CFR 1.71(a)-(c):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

(b) The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old. It must describe completely a specific embodiment of the process, machine, manufacture, composition of matter or improvement invented, and must explain the mode of operation or principle whenever applicable. The best mode contemplated by the inventor of carrying out his invention must be set forth.

(c) In the case of an improvement, the specification must particularly point out the part or parts of the process, machine, manufacture, or composition of matter to which the improvement relates, and the description should be confined to the specific improvement and to such parts as necessarily cooperate with it or as may be necessary to a complete understanding or description of it.

5. The specification is objected to under 37 CFR 1.71 because it is disclosing a device comprising a die, a dummy chip, a plurality of first leads and tapes of adhesive material among other elements, in an arrangement where the plurality of first leads is connected to the dummy chip through the tapes of adhesive material, while claim 1 has the tapes connected between said die and an end of said plurality of first leads over said dummy chip. The invention as disclosed in the detailed description of the invention is different than the invention of claims 1-7.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites in lines 11-12: "tapes connected between said die and an end of said plurality of first leads over said dummy chip", while in the Detailed Description and the Drawings, the tapes are connecting said plurality of first leads to the dummy chip.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites in lines 11-12: "tapes connected between said die and an end of said plurality of first leads over said dummy chip". This statement is vague, since it is not clear what is meant by "connected between", it is not clear how an object can be connected between two other objects, it is suggested to change the recitation to "disposed between" or "connecting".

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohno et al. (US Patent No 5,227,662) in view of Lee et al. (US Patent No 6,087,722).
As best understood by the examiner:

Regarding Claims 1 and 7, Ohno teaches a lead frame package with dummy chip comprising: a lead frame (Reference Number 10) with a plurality of first leads (Reference Number 12); a molding compound (Reference Number 38); a dummy chip (Reference Number 40) and a die (Reference Number 34), wherein said molding compound encapsulates said die and said dummy chip (See Figure 7), said dummy chip being arranged on a lower portion of said molding compound (See Figure 7), said die being stacked on an upper surface of said dummy chip (See Figure 7); and tapes (Reference Number 16) connected between said die and an end of said plurality of first leads over said dummy chip.

Ohno fails to teach that the die is stacked on an upper surface of said dummy chip by using an adhesive material. Lee teaches a chip (Reference number 71) attached to a pad (dummy chip) (Reference number 82), using an adhesive material (Reference number 92). In addition, Lee teaches a chip (Reference number 11) attached to another chip (Reference number 21). It would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine the teachings of Ohno and Lee, in order to attach the die to the dummy chip with an adhesive layer. Thus, stabilizing the package and avoiding undesired surfaces of the lead frame to be exposed.

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Regarding Claim 2, Ohno teaches that said dummy chip is formed of silicon (Column 5, line 44).

Regarding Claim 3, Ohno teaches that said dummy chip refers to a substrate without IC formed therein (See figure 7).

Regarding Claim 4, Ohno teaches that said dummy chip is exposed by said molding compound (See Figure 7).

Regarding Claim 5, Ohno teaches a tape (Reference Number 28) to fix said plurality of first leads.

Regarding Claim 6, Ohno fails to teach that said lead frame further comprises a plurality of second leads outside said dummy chip. Lee teaches a plurality of first leads (Reference Numbers 32 and 33) and a plurality of second leads (Reference numbers 31) outside a second chip (Reference number 21). See Figure 3. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to further modify the combination of the teachings of Ohno and Lee as stated supra for claim 1, in order to further comprises a plurality of second leads outside said dummy chip. Thus, stabilizing the package and adding more strength in order to hold the die more firmly over the dummy chip.

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Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references have some of the elements of the instant claimed invention: Hatano (US Patent No. 6,211,564 B1), Carter, Jr. et al. (US Patent No. 6,211,462 B1), Maslakow (US Patent No. 5,471,011), Yamasaki et al. (US Patent No. 5,192,995), Nambu et al. (US Patent No. 4,777,520), Matsunaga et al. (US Patent No. 5,093,712), Grabbe (US Patent No. 5,019,892) and Lenz (US Patent No. 6,031,279).
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose H Alcala whose telephone number is (703) 305-9844. The examiner can normally be reached from Monday to Friday.
14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (703) 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.
15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA
October 6, 2001

